

Before the
Federal Communications Commission
Washington, D.C.

DOCKET FILE COPY ORIGINAL

RECEIVED

MAY 01 2000

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Amendment of Section 73.622(b) of)
The Commission's Rules, DTV)
Table of Allotments)
(Johnstown and Jeannette, Pennsylvania))

MM Docket No.
RM No.

To: The Chief, Allocations Branch:

**AMENDED PETITION FOR RULEMAKING
AND REQUEST FOR EXPEDITED ACTION**

1. Paramount Stations Group of Pittsburgh Inc. ("Paramount") seeks to amend its petition for rulemaking in the above captioned matter which it filed on August 25, 1999. Pursuant to Section 73.623 of the Commission's rules 47 C.F.R. §73.623, Paramount had requested that the Commission institute a rulemaking proceeding for the purpose of amending the Table of Allotments for the digital television ("DTV") service to change the DTV community and channel allotments for station WNPA-DT from channel 30 at Johnstown, Pennsylvania, to channel 49 at Jeannette, Pennsylvania. In light of the November 1, 1999, deadline for Paramount to file the WNPA-DT construction permit application (Paramount has since filed a timely request for an extension of this filing deadline), Paramount had requested expedited action on its petition.

2. Paramount is the licensee of television station WNPA(TV), Jeannette, Pennsylvania, which currently operates on NTSC channel 19. Paramount submitted an engineering exhibit in conjunction with its petition indicating that prior to the release of the DTV Table of Allotments, the community of license of WNPA (then WTWB-TV) was changed from Johnstown to Jeannette. *See Johnstown and Jeannette, Pennsylvania,*

No. of Copies rec'd 012
List ABCDE
MMB

12 FCC Rcd 10300 (1997). The DTV Table of Allotments was not updated to reflect the change in WNPA's community of license.

3. Paramount also set forth in greater detail in its engineering exhibit that, because of the first adjacent allotment of WWCP-DT on channel 29 at Johnstown, Pennsylvania, WNPA-DT is unable to relocate its facilities to improve service to Jeannette with its current allocation of channel 30.

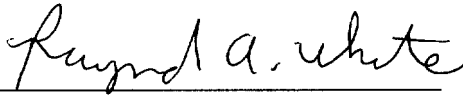
4. Paramount thus proposed to amend the DTV Table of Allotments to replace the DTV channel 30 allotment at Johnstown, Pennsylvania, with DTV channel 49 at Jeannette, Pennsylvania. Paramount demonstrated in its engineering exhibit, that the allocation of channel 49 to Jeannette at the WNPA-DT reference coordinates would result in additional interference to two additional stations (WEAO, NTSC channel 49, Akron, Ohio, and WPCB-DT, DTV channel 49, Greenburg, Pennsylvania), but noted that the proposed allotment met the Commission's *de minimus* interference criteria because the interference to both stations was less than 2%, with the aggregate interference for both stations less than 10%.

6. In its instant petition, Paramount proposes to amend its August 25, 1999, petition to request maximized facilities for WNPA-DT, which entail height above average terrain of 210 meters and a **maximized power level of 230kW effective radiated power**. While these proposed maximized facilities would result in interference to additional stations, as demonstrated in the attached Engineering Statement of Hammett & Edison, Inc., such interference would be less than the 2% with the aggregate interference for both stations less than 10%. Therefore, the proposed channel 49 allotment and operation meet the Commission's *de minimus* interference criteria.

7. Accordingly, Paramount respectfully requests that the Commission expeditiously commence a rulemaking proceeding to amend the DTV Table of Allotments to allot and assign DTV channel 49 to Jeannette, Pennsylvania (in lieu of channel 30 at Johnstown, Pennsylvania) for use by WNPA-DT with the maximized facilities as set forth herein.

Respectfully submitted,

Paramount Stations Group of Pittsburgh, Inc.

By: 
Raymond A. White
Regulatory Counsel

Paramount Stations Group of Pittsburgh, Inc
c/o Paramount Stations Group, Inc.
5202 River Road
Bethesda, Maryland 20816
(301) 961-2677

April 28, 2000

**Paramount Stations Group
Station WNPA-DT
Jeannette, Pennsylvania**

**Engineering Exhibit
in Support of Petition
for Rulemaking**

April 28, 2000

©2000 All rights reserved.



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

Station WNPA-DT • Jeannette, Pennsylvania

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by Paramount Stations Group of Pittsburgh, Inc., licensee of TV Station WNPA, NTSC Channel 19, Jeannette, Pennsylvania, to prepare an engineering exhibit in support of its petition for rulemaking to amend the DTV Table of Allotments, Section 73.622(b), to replace the DTV Channel 30 allotment at Johnstown, Pennsylvania, with DTV Channel 49 at Jeannette, Pennsylvania.

Background

TV Station WNPA is presently licensed to operate on NTSC Channel 19, serving Jeannette, Pennsylvania, with directional transmitting facilities of 3,020 kilowatts peak visual effective radiated power at a height above average terrain (HAAT) of 325 meters. In the *Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order* in MM Docket 87-268, adopted February 23, 1998, the Commission assigned DTV Channel 30 to Channel 19, Johnstown, Pennsylvania, with specified parameters of 162 kilowatts average effective radiated power (ERP) at 325 meters HAAT, using DTV replication pattern of NTSC service specified in the FCC database. Although the current FCC database indicates DTV Channel 30 allotted to Johnstown, Pennsylvania, TV Station WNPA, then WTWB-TV, changed its city of license from Johnstown to Jeannette prior to the release of the DTV Table of Allotments and the Table was not subsequently updated.

In the same proceeding, Station WWCP-TV, NTSC Channel 8, Johnstown, Pennsylvania, was assigned DTV Channel 29, with specified parameters of 662 kilowatts ERP at 368 meters HAAT. The WWCP-DT reference site is located 1 kilometer from the WNPA-DT reference coordinates

DTV Table of Allotments Proposed Channel Substitution

The WNPA transmitter site is located approximately 42 kilometers from its city of license with significant intervening terrain. Since the first adjacent allotments for WNPA-DT and WWCP-DT are, in effect, collocated, both stations are severely limited in their ability to relocate their DTV transmitter facilities. Any attempt to relocate WNPA-DT, in order to improve DTV service to its community of license and the associated market, results in a projected increase in interference to WWCP-DT that violates the FCC *de minimus* interference criteria. Due to the inability of WNPA-DT to relocate and improve service with its current allocation of DTV Channel 30, it is proposed to amend the Digital Television Table of Allotments in Section 73.622 of the FCC Rules to substitute Channel 49 in place of Channel 30 at Jeannette, Pennsylvania, for the use of



Station WNPA-DT • Jeannette, Pennsylvania

WNPA-DT. The proposed facilities would be located at reference coordinates of 40° 26' 46" N, 79° 57' 51" W with a height above average terrain of 210 meters (525 meters above mean sea level) and a maximized power level of 230 kW effective radiated power.

Channel 49 Allocation Conditions

For the purposes of the allocation study from the reference coordinates, omnidirectional operation at the proposed power has been assumed, in order to present a "worst-case" analysis. Using the FCC OET-69 interference prediction methodology, described in detail in Figure 1, the proposed change to Channel 49 at Jeannette, Pennsylvania, would result in predicted interference to all other stations from Channel 49 of less than 2.0%, with the aggregate interference for all affected stations less than 10.0%, as shown in the summary of OET-69 calculation results in Figure 2. Therefore, the proposed Channel 49 allotment does meet the FCC *de minimus* interference criteria.

Summary

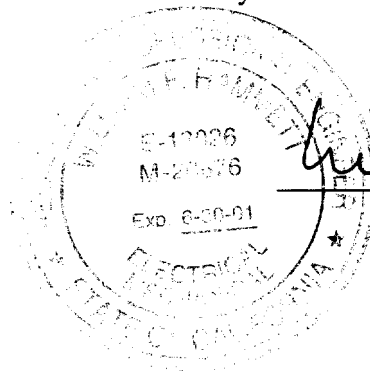
The channel change of the DTV allotment for WNPA-DT from Channel 30 to Channel 49 meets the FCC Rules for protection of NTSC operations and DTV allotments from interference.

List of Figures

In carrying out these engineering studies, the following attached figures were prepared under my direct supervision:

1. TVIXSTUDY™ methodology
2. Summary of OET-69 interference study.

April 28, 2000




William F. Hammett, P.E.

Affidavit

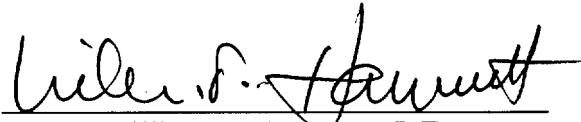
State of California

County of Sonoma

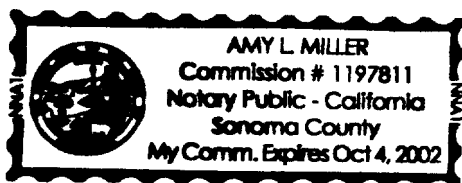
ss:

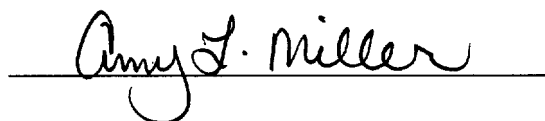
William F. Hammett, being first duly sworn upon oath, deposes and says:

1. That he is a qualified Registered Professional Engineer, holds California Registrations Nos. E-13026 and M-20676, which expire on June 30, 2001, and is a principal in the firm of Hammett & Edison, Inc., Consulting Engineers, with offices located near the city of San Francisco, California,
2. That he graduated from Dartmouth College with a degree in Engineering Sciences in 1977 and from the University of Illinois with a degree of Master of Science in 1978, has completed two years of employment by the Standard Oil Company and five years by Dean Witter Reynolds in various engineering, computer, and management capacities, and has been associated with the firm of Hammett & Edison, Inc., since 1985,
3. That the firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by Paramount Stations Group of Pittsburgh, Inc., licensee of TV Station WNPA, NTSC Channel 19, Jeannette, Pennsylvania, to prepare an engineering exhibit in support of its petition for rulemaking to amend the DTV Table of Allotments, Section 73.622(b), to replace the DTV Channel 30 allotment at Johnstown, Pennsylvania, with DTV Channel 49 at Jeannette, Pennsylvania,
4. That such engineering work has been carried out by him or under his direction and that the results thereof are attached hereto and form a part of this affidavit, and
5. That the foregoing statement and the report regarding the aforementioned engineering work are true and correct of his own knowledge except such statements made therein on information and belief and, as to such statements, he believes them to be true.


William F. Hammett, P.E.

Subscribed and sworn to before me this 28th day of April, 2000







HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

990813.1
Affidavit

TVIXSTUDY™ Analysis Methodology

Implementation of FCC's Interference-Based Allocation Algorithm

On April 21, 1997, the Federal Communications Commission released its Fifth and Sixth Report and Order texts to Mass Media Docket No. 87-268, establishing a final Table of Allotments for the transition from analog NTSC television service to a digital television ("DTV") service. The Commission utilized a complex set of computerized analysis tools to generate the DTV allotment table and added FCC Rules Section 73.623(b)(2), requiring that similar tools be employed to analyze individual DTV station assignments with regard to their potential interference to other DTV stations, DTV allotments, and existing or authorized NTSC facilities. Those tools were described in FCC OET Bulletin No. 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference* ("OET-69"), released on July 2, 1997. Subsequent to OET-69, the Commission released, on February 23, 1998, its Memorandum Opinion and Order on Reconsideration of the Fifth [and Sixth] Report and Order[s], which made a number of changes to the previous allotment table and modified several of the analysis methods to be employed for studying DTV allotments and potential facility modifications. On August 10, 1998, the Commission published a text, *Additional Application Processing Guidelines for Digital Television (DTV)*, which provided important clarifications and enhancements to the specified analysis methods. Hammett & Edison has developed and refined the TVIXSTUDY computer software to perform FCC-style DTV allocation studies as based on OET-69, its subsequent clarifications, and also upon a detailed examination of the FCC allotment program software source code.

For most NTSC or DTV stations to be studied, the FCC analysis model first determines the location of the conventional F(50,50) Grade B contour of the NTSC station, or of the NTSC station associated with an assigned DTV station, using pattern information contained in the FCC engineering database and an assumed antenna elevation pattern. The model assumes that contour as an envelope, outside of which no protection from interference is implied or afforded. The location of the Grade B contour was used to determine the assigned power for the DTV station, once again using conventional methods found in FCC Rules Section 73.699, Figures 9 and 10, determining the power necessary on a radial basis to generate the associated DTV coverage contour (41 dBu for UHF, 36 dBu for high VHF Channels 7-13, and 28 dBu for low VHF Channels 2-6), for an assigned DTV channel. The maximum power determined using this method was assigned as the DTV operating power, provided it was calculated to be above established minimum power levels; otherwise, a minimum power level was assigned. By the same token, facilities with calculated DTV power levels above the established maximum power levels for a given channel were assigned the maximum power level. The use of this method usually creates a directional DTV antenna replication pattern, even for DTV assignments to presently omnidirectional NTSC TV stations. The FCC requires that a DTV facility employ an antenna design that meets the calculated replication envelope parameters, unless, with a few exceptions, zero or *de minimus* new interference to other facilities can be demonstrated.

In addition to the use of the Grade B envelope and an assumed directional transmitting antenna for all DTV facilities, the model assumes the use of directive receiving antennas at each studied location, or "cell." The characteristics of the receiving antennas are different, not only for the low



VHF, high VHF, and UHF frequency bands, but also for NTSC and DTV receiving situations; the FCC model specifies that more directive antennas be employed for analysis of DTV reception.

The FCC analysis technique employs terrain-sensitive calculation methods based on Version 1.2.2 of the ITS Irregular Terrain Model, also known as the Longley-Rice model. For each NTSC or DTV station to be studied, a grid of cells, two kilometers on a side, fills the associated Grade B or noise-limited contour. The program first determines which of the cells is predicted to receive service from the associated station, using Longley-Rice analysis with F(50,50) statistical weighting for NTSC and F(50,90) statistical weighting for DTV stations. Cells determined to have no service are not studied for interference from other stations.* Once cells having service are determined, the software analyzes potential interference from other NTSC or DTV stations, again using the Longley-Rice propagation algorithm and defined statistical weighting for all potential interfering signals. Each cell is evaluated, as appropriate, using the desired-to-undesired ratios and methods presented in FCC Rules Section 73.622, 73.623, and 74.706 for each channel relationship, and cells determined to have interference are flagged and excluded from further study, resulting in the generation of net interference-free coverage population totals.

The TVIXSTUDY analysis program employs all of the OET-69 analysis features described above, as well as several other more subtle elements prescribed by the FCC. Additionally, the program allows modeling of implementation scenarios that involve changes to effective radiated power, antenna height, antenna pattern, channel number, and/or transmitter location. TVIXSTUDY also can identify cells that fall in major bodies of water, as based on digitized map data, excluding them from the study. The program is primarily intended to study the effects of existing/potential NTSC or DTV facilities on other DTV or NTSC facilities, as based on desired-to-undesired ratio parameters defined in OET-69. A typical TVIXSTUDY analysis summary includes technical parameters of the proposed DTV or NTSC facility, along with its original (pre-modification) technical parameters, if any. Also included is a listing of each protected DTV and/or NTSC facility or allotment with associated interference-free population tabulations and the unique interference population resulting from operation of the proposed facility. TVIXSTUDY is similar to the program TVCOVSTUDY, which instead predicts the interference-limited coverage of a selected facility.

The results of the OET-69 algorithm are dependent on the use of computer databases, including terrain, population, and FCC engineering records. FCC Rules §0.434(e) specifically disclaims the accuracy of its databases, recommending the use of primary data sources (*i.e.*, paper documents), which is not practical for DTV interference analyses. Further, while Hammett & Edison, Inc. endeavors to follow official releases and established precedents on the matter, FCC policy on DTV analysis methods is constantly changing. Thus, the results of OET-69 interference and coverage studies are subject to change and may differ from FCC results.

* It is noted that the Longley-Rice model is not always capable of determining, within certain confidence limits, whether a particular cell has service. In such cases, the Longley-Rice algorithm returns an error code; the FCC method for handling such error codes is to assume that the associated cells have interference-free service and, as such, are not further considered. The Hammett & Edison TVIXSTUDY program reports the number of such error cells for a given study and provides the option of generating a map showing their locations, which may be useful for further review using other propagation analysis tools.

Station WNPA-DT • Jeannette, Pennsylvania

Results of OET-69 Interference Study

tvixstudy 2.3.6

After case parameters:

--Modified-----
 Station: D49 allot
 City: JOHNSTOWN, PA
 Coordinates: N 40-26-46.0
 W 79-57-51.0
 Height AMSL: 525.0 m
 Maximum ERP: 230 kW
 Azimuth pattern: omnidirectional
 Orientation:
 Elevation pattern: OET-69 generic
 Service level: 41.9 dBu

Before case parameters:

--Original-----
 D30 allot
 JOHNSTOWN, PA
 N 40-10-51.0
 W 79-09-46.0
 936.0 m
 162 kW
 DTV1239 (replication)
 0.0
 OET-69 generic
 40.3 dBu

Protected station	BasePop 1000s	Before		After		%Chng
		IX 1000s	Change %Base	IX 1000s	Change %Base	
N49 WGCB-TV LIC RED LION, PA	1,361	110	8.1	110	8.1	0.0
N49 WGCB-TV APP RED LION, PA	1,384	103	7.4	103	7.4	0.0
N49 WEAO LIC AKRON, OH	3,138	269	8.6	315	10.0	1.4
N53 WPGH-TV LIC PITTSBURGH, PA	2,729	49	1.8	49	1.8	0.0
N53 WPGH-TV CP PITTSBURGH, PA	2,879	37	1.3	37	1.3	0.0
N49 WNYO-TV LIC BUFFALO, NY	1,459	2	0.1	2	0.1	0.0
N45 WNEO LIC ALLIANCE, OH	2,160	4	0.2	4	0.2	0.0
D49 WNWO-DT CP TOLEDO, OH	2,278	107	4.7	107	4.7	0.0
D49 WNWODT allot TOLEDO, OH	2,278	3	0.1	3	0.1	0.0
ERP = 316 kW						
D49 WNEP-DT APP SCRANTON, PA	1,383	-134	-9.7	-134	-9.7	0.0
D49 WNEPDT allot SCRANTON, PA	1,383	-40	-2.9	-40	-2.9	0.0
ERP = 73.5 kW						
D49 WNEPDT allot SCRANTON, PA	1,383	-347	-25.1	-347	-25.1	0.0
ERP = 200 kW						
D50 WPCB-DT APP GREENSBURG, PA	2,528	-401	-15.9	-390	-15.4	0.5
D50 WPCBDT allot GREENSBURG, PA	2,528	105	4.2	135	5.3	1.1
ERP = 50.0 kW						
D50 WPCBDT allot GREENSBURG, PA	2,528	-196	-7.8	-176	-7.0	0.8
ERP = 200 kW						
D49 WTAP-DT APP PARKERSBURG, WV	281	-60	-21.4	-59	-21.0	0.4
D49 WTAPDT allot PARKERSBURG, WV	281	1	0.4	1	0.4	0.0
ERP = 50.0 kW						
D49 WTAPDT allot PARKERSBURG, WV	281	-112	-39.9	-112	-39.9	0.0
ERP = 200 kW						
D49 WHSV-DT APP HARRISONBURG, VA	532	102	19.2	102	19.2	0.0
D49 WHSVDT allot HARRISONBURG, VA	532	85	16.0	85	16.0	0.0
ERP = 95.2 kW						
D49 WHSVDT allot HARRISONBURG, VA	532	-57	-10.7	-57	-10.7	0.0
ERP = 200 kW						
D48 WPXI LIC PITTSBURGH, PA	3,429	319	9.3	321	9.4	0.1
D48 WPXIDT allot PITTSBURGH, PA	3,429	0	0.0	1	0.0	0.0
ERP = 1000 kW						
D50 WEAODT allot AKRON, OH	3,159	16	0.5	16	0.5	0.0
ERP = 50.0 kW						
D50 WEAODT allot AKRON, OH	3,159	-514	-16.3	-514	-16.3	0.0
ERP = 200 kW						

